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Serial No. 09/824,298

Listing of Claims:

1. (Currently amended): A method in a data processing system for managing traffic in a network data processing system, the method comprising:

monitoring the traffic for a plurality of ~~network paths~~ TCP connections or UDP associations through a given network path; and

responsive to a packet for a particular ~~network path~~ TCP connection or UDP association within the plurality of ~~network paths~~ TCP connections or UDP associations causing the traffic for the ~~particular~~ network path to exceed a level of traffic allowed, reducing an amount of bandwidth available to one of the particular network path TCP connection or UDP association and another TCP connection or UDP association using an action based on a transmission protocol used by corresponding to the particular network path one TCP connection or UDP association, wherein the action used varies for different transmission protocols.

2. (Previously presented): The method of claim 1, wherein the traffic is monitored using at least one of a data transfer rate, peak data transfer rate, burst size, and maximum packet size.

3. (Currently Amended): The method of claim 1, wherein when the one TCP connection or UDP association comprises a TCP connection the action comprises:

reducing a congestion window size by multiplying the amount of bandwidth available by a dynamic variable that is adjusted using changing requirements of the ~~particular~~ network path to reduce the amount of bandwidth available based on a fair share for the ~~particular network path~~ one TCP connection.

4. (Currently Amended): The method of claim 3, wherein the congestion window size is reduced as follows:

$$CW = \max(\text{MinW}, \min(CW * F, \text{MaxW}))$$

wherein CW is the congestion window size, MinW is a minimum congestion window size for the ~~particular network path~~ one TCP connection, MaxW is a maximum congestion window size for

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the ~~particular network path~~ one TCP connection, and F is the dynamic variable ~~used to adjust the congestion window size for the particular network path.~~

5. (Currently Amended): The method of claim 1, wherein the action comprises:
setting a quality of service for packets ~~sent using the particular network path.~~
6. (Previously presented): The method of claim 1, wherein the action comprises:
dropping the packet.
7. (Currently amended): A method in a data processing system for managing traffic in a network data processing system, the method comprising:
monitoring ~~aggregate~~ traffic for each of a plurality of ~~network paths~~ TCP connections or UDP associations through a given network path; and
responsive to the ~~aggregate~~ traffic for a selected ~~network path~~ TCP connection or UDP association exceeding a threshold, reducing the ~~aggregate~~ traffic for the selected ~~network path~~ TCP connection or UDP association using an action based on a transmission protocol ~~used by corresponding to the selected TCP connection or UDP association network path, wherein the action varies for different transmission protocols.~~
8. (Previously presented): The method of claim 7, wherein the ~~aggregate~~ traffic comprises at least one of a data transfer rate, peak data transfer rate, burst size, and maximum packet size.
9. (Currently Amended): The method of claim 7, wherein when the selected TCP connection or UDP association comprises a selected TCP connection the action comprises:
reducing a congestion window size by multiplying an amount of ~~aggregate~~ traffic by a dynamic variable that is adjusted using changing requirements of the ~~selected~~ network path to reduce the ~~aggregate~~ traffic for the selected ~~network path~~ TCP connection.

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10. (Previously presented): The method of claim 7, wherein the action comprises:
reducing a sending size for data packets.
11. (Deleted)
12. (Currently amended): The method of claim 7, wherein the threshold takes into account a fair share of bandwidth available for the plurality of ~~network paths~~ TCP connections or UDP associations.
13. (Currently amended): A data processing system comprising:
a bus system;
a communications unit connected to the bus, wherein data is sent and received using the communications unit;
a memory connected to the bus system, wherein a set of instructions are located in the memory; and
a processor unit connected to the bus system, wherein the processor unit executes the set of instructions to monitor traffic for a plurality of ~~network paths~~ TCP connections or UDP associations through a given network path; and reduce an amount of bandwidth available to one of a particular network path TCP connection or UDP association and another TCP connection or UDP association using an action based on a transmission protocol ~~used by~~ corresponding to the ~~particular network path~~ one TCP connection or UDP association in response to a packet for the particular ~~network path~~ TCP connection or UDP association within the plurality of ~~network paths~~ TCP connections or UDP associations causing the traffic for the ~~particular network path~~ to exceed a level of traffic allowed, ~~wherein the action varies for different transmission protocols.~~
14. (Previously presented): The data processing system of claim 13, wherein the bus system comprises a primary bus and a secondary bus.
15. (Previously presented): The data processing system of claim 13, wherein the processor

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unit comprises a single processor.

16. (Previously presented): The data processing system of claim 13, wherein the processor unit comprises a plurality of processors.

17. (Original): The data processing system claim 13, wherein the communications unit is an Ethernet adapter.

18. (Currently amended): A data processing system comprising:
a bus system;
a communications unit connected to the bus, wherein data is sent and received using the communications unit;
a memory connected to the bus system, wherein a set of instructions are located in the memory; and
a processor unit connected to the bus system, wherein the processor unit executes the set of instructions to monitor aggregate traffic for each of a plurality of ~~network paths~~ TCP connections or UDP associations through a given network path; and reduce the aggregate traffic for a selected ~~network path~~ TCP connection or UDP association using an action based on a transmission protocol ~~used by~~ corresponding to the selected ~~network path~~ TCP connection or UDP association in response to the aggregate traffic for the selected ~~network path~~ TCP connection or UDP association exceeding a threshold, ~~wherein the action varies for different transmission protocols.~~

19. (Previously presented): The data processing system of claim 18, wherein the bus system comprises a primary bus and a secondary bus.

20. (Previously presented): The data processing system of claim 18, wherein the processor unit comprises a single processor.

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21. (Previously presented): The data processing system of claim 18, wherein the processor unit comprises a plurality of processors.

22. (Original): The data processing system claim 18, wherein the communications unit is an Ethernet adapter.

23. (Currently amended): A data processing system for managing traffic in a network data processing system, the data processing system comprising:

means for monitoring the traffic for a plurality of ~~network paths~~ TCP connections or UDP associations through a given network path; and

means for reducing, responsive to a packet for a particular ~~network path~~ TCP connection or UDP association within the plurality of ~~network paths~~ TCP connections or UDP associations causing the traffic for the ~~particular~~ network path to exceed a level of traffic allowed, an amount of bandwidth available to one of the particular network path TCP connection or UDP association and another TCP connection or UDP association using an action based on a transmission protocol used by corresponding to the particular one TCP connection or UDP association network path, ~~wherein the action varies for different transmission protocols.~~

24. (Previously presented): The data processing system of claim 23, wherein the traffic is monitored using at least one of a data transfer rate, peak data transfer rate, burst size, and maximum packet size.

25. (Currently amended): The data processing system of claim 23, wherein when the one TCP connection or UDP association comprises a TCP connection the action comprises:

reducing a congestion window size by multiplying the amount of bandwidth available by a dynamic variable that is adjusted using changing requirements of the ~~particular~~ network path to reduce the amount of bandwidth available based on a fair share for the ~~particular network path~~ one TCP connection.

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26. (Currently amended): The data processing system of claim 25, wherein the congestion window size is reduced as follows:

$$CW = \max(\text{MinW}, \min(CW * F, \text{MaxW}))$$

wherein CW is the congestion window size, MinW is a minimum congestion window size for the ~~particular network path~~ one TCP connection, MaxW is a maximum congestion window size for the ~~particular network path~~ one TCP connection, and F is the dynamic variable used to adjust the ~~particular network path~~.

27. (Currently amended): The data processing system of claim 23, wherein the action comprises:

means for setting a quality of service for packets sent using the ~~particular network path~~.

28. (Previously presented): The data processing system of claim 23, wherein the action comprises:

means for dropping the packet.

29. (Currently amended): A data processing system for managing traffic in a network data processing system, the data processing system comprising:

means for monitoring ~~aggregate~~ traffic for each of a plurality of ~~network paths~~ TCP connections or UDP associations through a given a network path; and

means for reducing, responsive to the ~~aggregate~~ traffic for a selected ~~network path~~ TCP connection or UDP association exceeding a threshold, the ~~aggregate~~ traffic for the selected ~~network path~~ TCP connection or UDP association using an action based on a transmission protocol used by corresponding to the selected TCP connection or UDP association network path, wherein the action varies for different transmission protocols.

30. (Previously presented): The data processing system of claim 29, wherein the aggregate traffic comprises at least one of a data transfer rate, peak data transfer rate, burst size, and maximum packet size.

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31. (Currently amended): The data processing system of claim 29, wherein when the selected TCP connection or UDP association comprises a selected TCP connection the action comprises:

reducing a congestion window size by multiplying an amount of ~~aggregate~~ traffic by a dynamic variable that is adjusted using changing requirements of the ~~selected~~ network path to reduce the ~~aggregate~~ traffic for the ~~selected-network-path~~ TCP connection.

32. (Previously presented): The data processing system of claim 29, wherein the action comprises:

means for reducing a sending size for data packets.

33. (Currently amended): The data processing system of claim 29, wherein the action comprises changing a quality of service for data packets ~~for the selected network path~~.

34. (Currently amended): The data processing system of claim 29, wherein the threshold takes into account a fair share of bandwidth available for the plurality of ~~network paths~~ TCP connections or UDP associations

35. (Currently amended): A computer program product for managing traffic in a network data processing system, the computer program product comprising:

a computer readable medium having computer usable program code embodied therein, the computer readable medium comprising:

computer usable program code configured to monitor the traffic for a plurality of ~~network paths~~ TCP connections or UDP associations through a given network path;

computer usable program code configured to reduce an amount of bandwidth available to one of a particular network-path TCP connection or UDP association and another TCP connection or UDP association using an action based on a transmission protocol ~~used by~~ corresponding to the particular network-path one TCP connection or UDP association in

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response to a packet for the particular ~~network path~~ TCP connection or UDP association within the plurality of ~~network paths~~ TCP connections or UDP associations causing the traffic for the particular network path to exceed a level of traffic allowed, ~~wherein the action varies for different transmission protocols.~~

36. (Previously presented): The computer program product as recited in claim 35, wherein the traffic is monitored using at least one of a data transfer rate, peak data transfer rate, burst size, and maximum packet size.

37. (Currently amended): The computer program product as recited in claim 35, wherein when the one TCP connection or UDP association comprises a TCP connection the action comprises:

reducing a congestion window size by multiplying an amount of bandwidth available by a dynamic variable that is adjusted using changing requirements of the ~~particular~~ network path to reduce the amount of bandwidth available based on a fair share for the ~~particular network path~~ one TCP connection.

38. (Currently amended): The computer program product as recited in claim 37, wherein the congestion window size is reduced as follows:

$$CW = \max(\text{MinW}, \min(CW * F, \text{MaxW}))$$

wherein CW is the congestion window size, MinW is a minimum congestion window size for the ~~particular network path~~ one TCP connection, MaxW is a maximum congestion window size for the ~~particular network path~~ one TCP connection, and F is the dynamic variable ~~used to adjust the particular network path.~~

39. (Currently amended): The computer program product as recited in claim 35, wherein the action comprises:

setting a quality of service for packets sent ~~using the particular network path.~~

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40. (Previously presented): The computer program product as recited in claim 35, wherein the action comprises:

dropping the packet.

41. (Currently amended): A computer program product for managing traffic in a network data processing system, the computer program product comprising:

a computer readable medium having computer usable program code embodied therein, the computer readable medium comprising:

computer usable program code configured to monitor ~~aggregate~~ traffic for each of a plurality of ~~network paths~~ TCP connections or UDP associations through a given network path; and

computer readable program code configured to reduce the ~~aggregate~~ traffic for a selected ~~network path~~ TCP connection or UDP association using an action based on a transmission protocol ~~used by~~ corresponding to the selected ~~network path~~ TCP connection or UDP association in response to the ~~aggregate~~ traffic for the selected ~~network path~~ TCP connection or UDP association exceeding a threshold, ~~wherein the action varies for different transmission protocols.~~

42. (Previously presented): The computer program product as recited in claim 41, wherein the ~~aggregate~~ traffic comprises at least one of a data transfer rate, peak data transfer rate, burst size, and maximum packet size.

43. (Currently amended): The computer program product as recited in claim 41, wherein when the selected TCP connection or UDP association comprises a selected TCP connection the action comprises:

reducing a congestion window size by multiplying an amount of ~~aggregate~~ traffic by a dynamic variable that is adjusted using changing requirements of the ~~selected~~ network path to reduce the ~~aggregate~~ traffic for the selected ~~network path~~ TCP connection.

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44. (Previously presented): The computer program product of claim 41, wherein the action comprises:

reducing a sending size for data packets.

45. (Currently amended): The computer program product of claim 41, wherein the action comprises:

changing a quality of service for data packets ~~for the selected network path.~~

46. (Currently amended): The computer program product of claim 41, wherein the threshold takes into account a fair share of bandwidth available for the plurality of ~~network paths~~ TCP connections or UDP associations.

47. (New) The method of claim 1, wherein said monitoring comprises monitoring at a server the traffic for the plurality of TCP connections or UDP associations through a given network.